Subject: Re: eta_c reconstruction efficiency
Posted by StefanoSpataro on Wed, 19 Oct 2011 16:07:05 GMT
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Dear all,
I have started also to investigate the problem of the eta_c efficiency loss.
For this I have run the simulation chain up to SttMvdTracking, w/o genfit, using the trnk PndSttMvdracking.* and comparing with the july11 version.
The followings are the invariant mass distributions for eta_c and phi, with trunk and july11:

You can see there are no differences.

After, I run the same but also genfit:

Here the difference is evident, even if the kalman code is exactly the same for the two options.

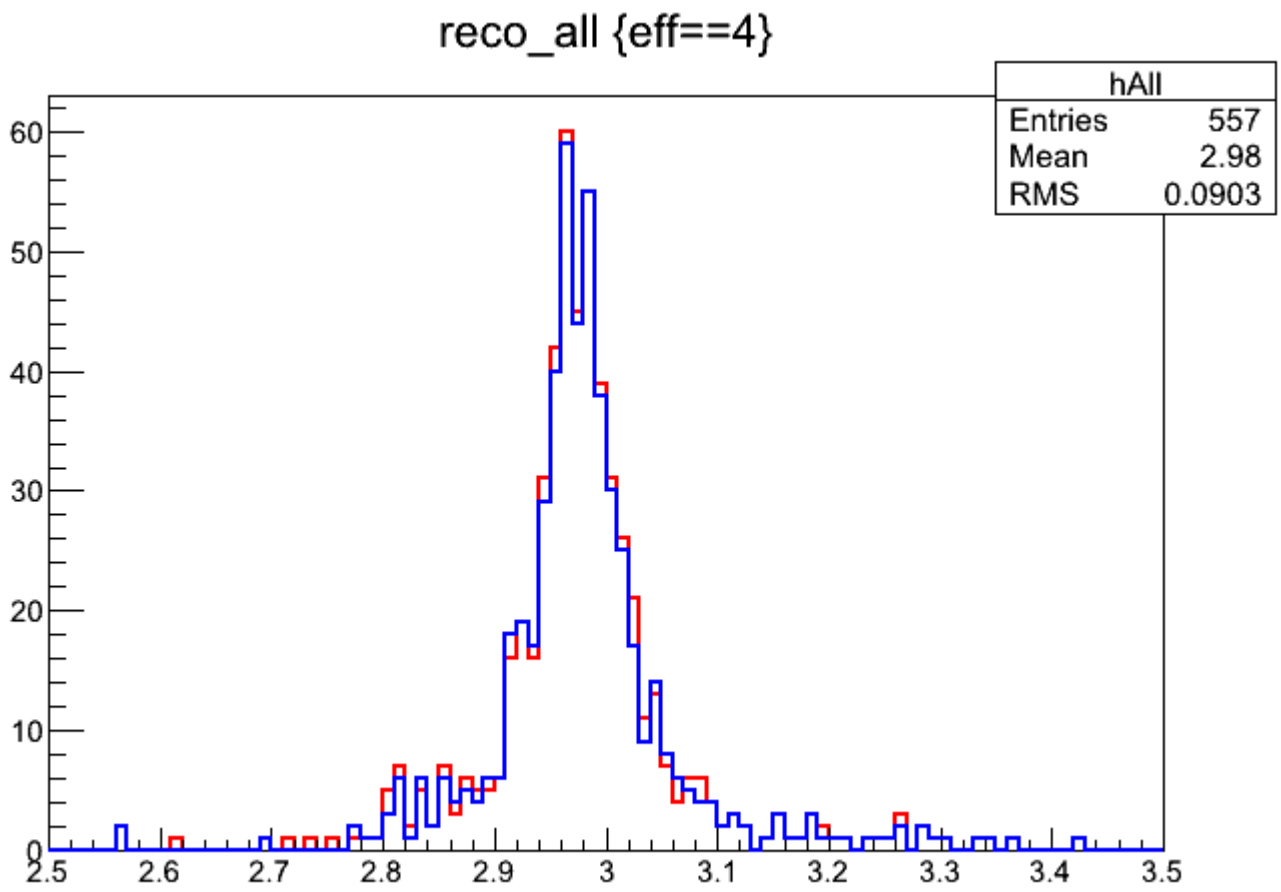
I suspected it was connected with the montecarlo id hypothesis of the mctrackassociator, and I have run genfit using the standard muon hyp:

The same. The problem does not depend on the mc id part.

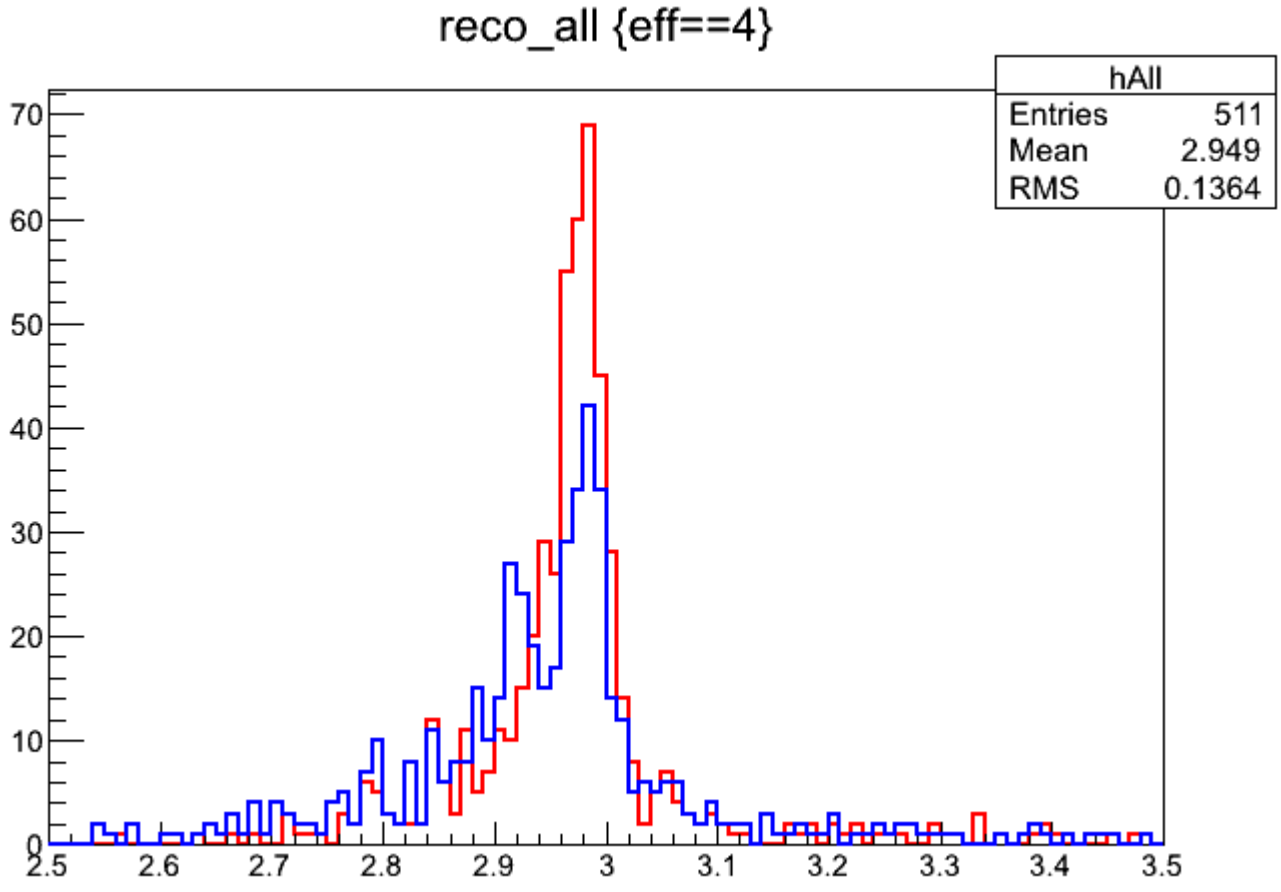
My guess:
the STTMVD pattern recognition part is fine, it provides nice peaks w/o the kalman. The kalman does some mess with the latest code. Considering that the kalman starts from the track parameters at the first point (which should be fine according to the first plots) and from the trackcand, I suspect that in the latter SttMvdTracking there is some mess with the TrackCand object.

File Attachments

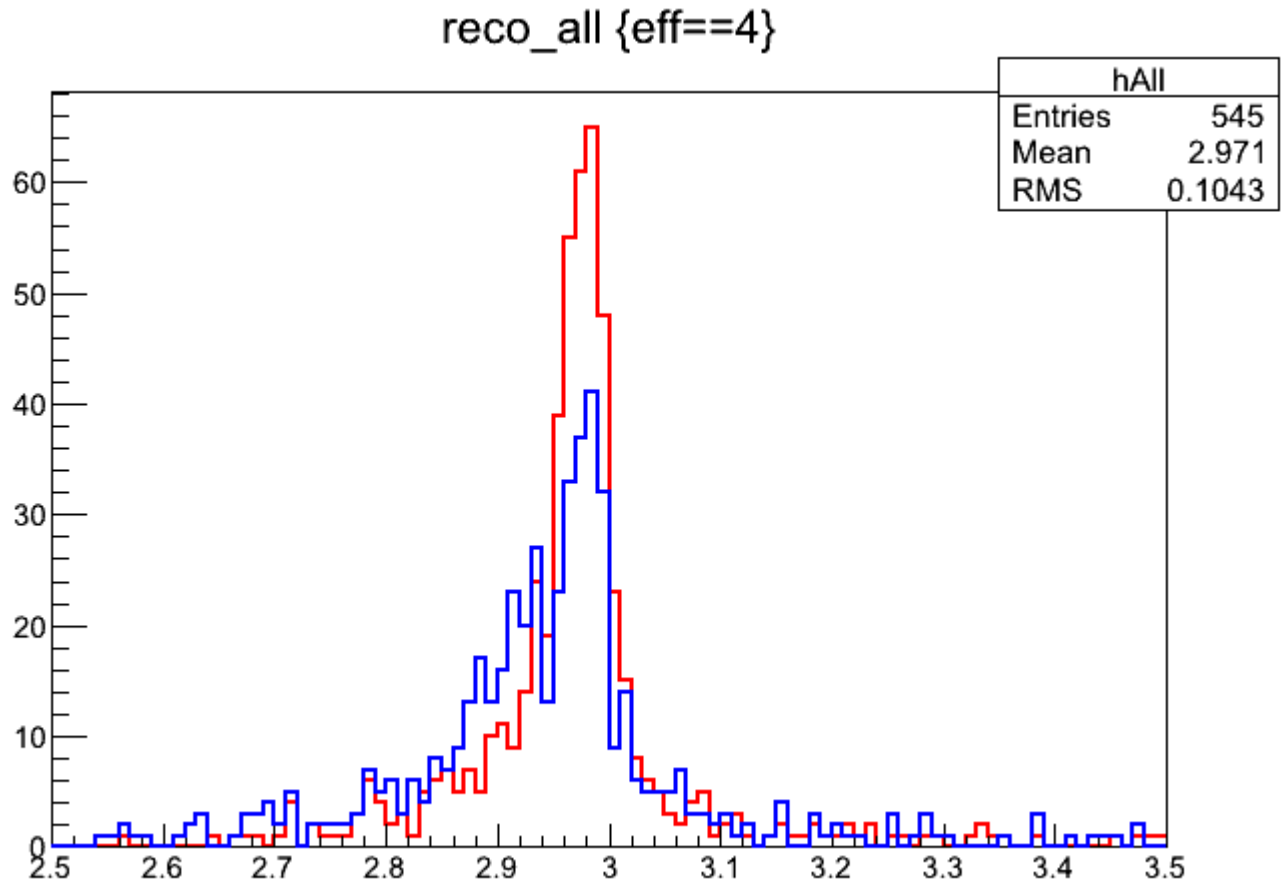
1) etac_sttmvd.gif, downloaded 1179 times



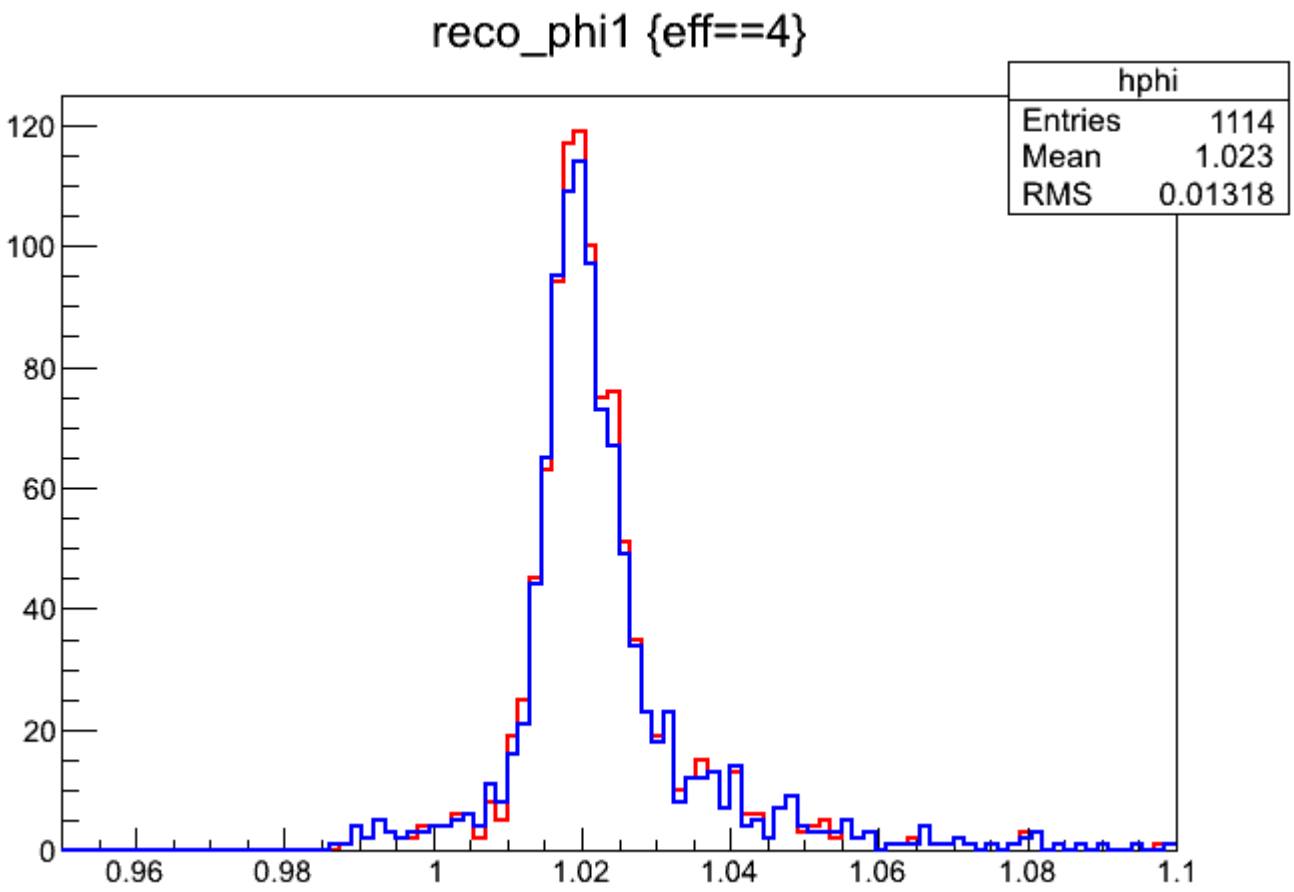
2) etac_sttmvdgen.gif, downloaded 1160 times



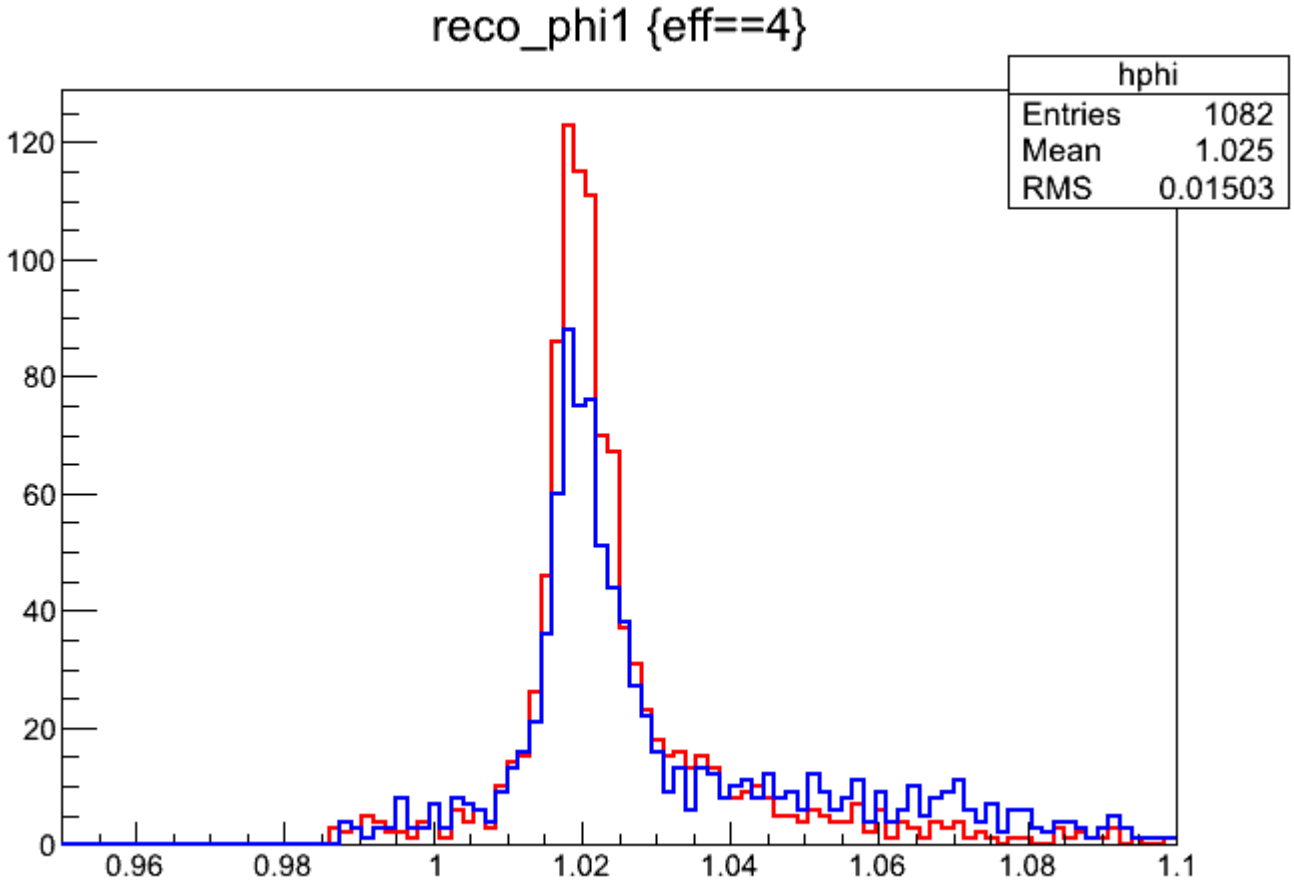
3) eta_sttmvdgen_nomc.gif, downloaded 1198 times



4) phi_sttmvd.gif, downloaded 1203 times



5) phi_sttmvdgen.gif, downloaded 1185 times



6) phi_sttmvdgen_nomc.gif, downloaded 1168 times